(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 August 2001 (23.08.2001)

PCT

(10) International Publication Number
WO 01/60220 A1

(51) International Patent Classification[7]: A47J 31/06, B65D 81/00

(21) International Application Number: PCT/US01/04723

(22) International Filing Date: 14 February 2001 (14.02.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/183,569	18 February 2000 (18.02.2000)	US
09/782,665	13 February 2001 (13.02.2001)	US

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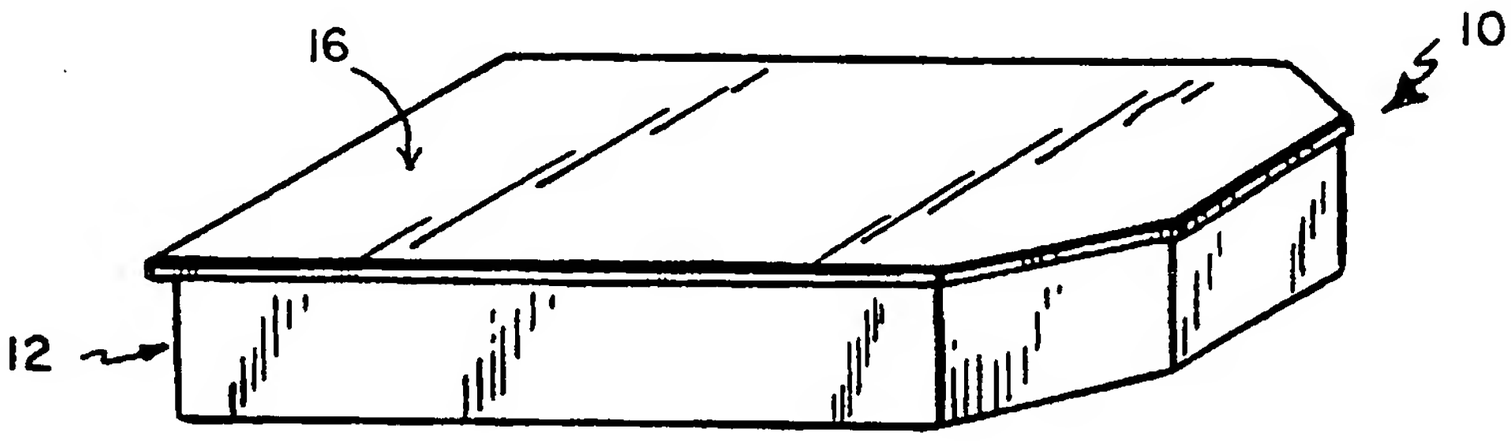
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DISPOSABLE SINGLE SERVE BEVERAGE FILTER CARTRIDGE



(57) **Abstract:** A beverage filter cartridge comprises an outer container (12) with an access opening. A filter element (14) is received in and configured and arranged to subdivide the interior of the container into first and second chambers (A, B). A beverage medium is stored in the first chamber (A). A lid (16) closes the access opening. The lid has a first section overlying the first chamber (A) and a second section overlying the second chamber (B). The first section of the lid is yieldably piercable to accommodate an inflow of liquid into the first chamber for infusion with the beverage medium to produce a beverage. The filter element is permeable to accommodate a flow of the beverage from the first chamber into the second chamber, and the second section of the lid (16) is yieldably piercable to accommodate an outflow of the beverage from the second chamber to the exterior of the cartridge.

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(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
23 August 2001 (23.08.2001)

PCT

(10) International Publication Number
WO 01/60712 A1

(51) International Patent Classification[7]: B65D 81/00

(21) International Application Number: PCT/US01/04881

(22) International Filing Date: 16 February 2001 (16.02.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/183,708	18 February 2000 (18.02.2000)	US
09/782,622	13 February 2001 (13.02.2001)	US

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(74) Agents: **GAUTHIER, Maurice, E.** et al.; Samuels, Gauthier & Stevens, LLP, Suite 3300, 225 Franklin Street, Boston, MA 02110 (US).

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Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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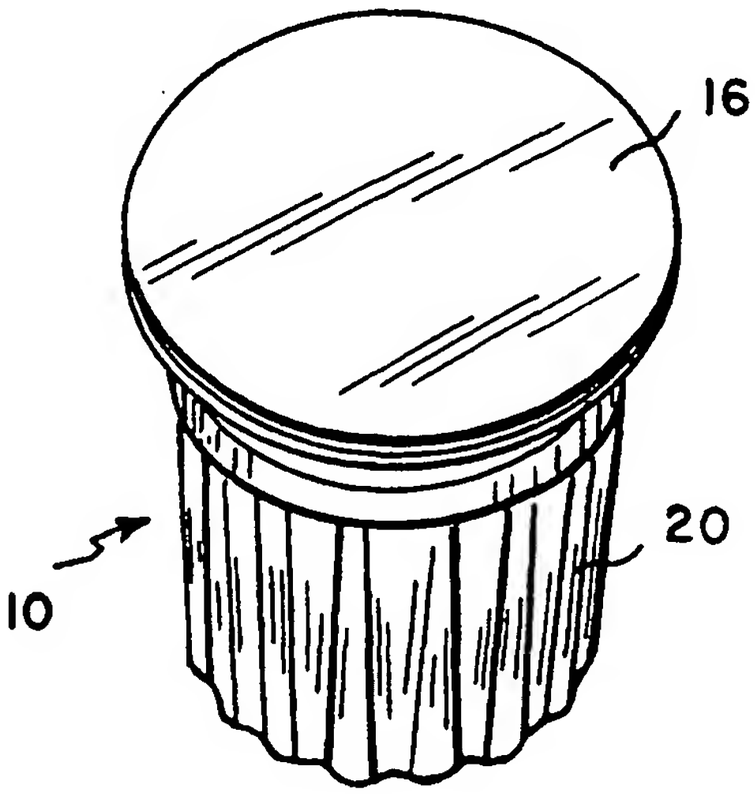
(54) Title: BEVERAGE FILTER CARTRIDGE



(57) Abstract: A beverage filter cartridge (10) includes a cup-shaped outer container (12) with a bottom (18) and a side wall (20) extending upwardly from the bottom wall (18) to a circular rim (22) surrounding an upper opening (24). The side wall (29) has an upper section (20a) extending downwardly from the rim (22) to an intermediate section, and a tapered lower section (20c) configured to provide a plurality of circumferentially spaced flutes (20e) extending downwardly from the intermediate section to the bottom wall (18). A filter element (14) subdivides the interior of the container (12) into first (A) and second (B) chambers. A beverage medium is stored in the first chamber (A). A cover (16) is joined to the side wall (20) at the rim (22) to close the upper opening (24). The cover (16) is yieldably piercable to accommodate an injection of liquid into the first chamber (A) for combination with the beverage medium to produce a beverage. The filter element (14) is permeable to accommodate a flow of the beverage from the first chamber (A) into the second chamber (B), and the bottom wall (18) is yieldably piercable to accommodate an outflow of the beverage from the second chamber (B) to the exterior of the cartridge.

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BEVERAGE FILTER CARTRIDGE

CROSS REFERENCE TO RELATED APPLICATIONS

This application claims priority from U.S. Provisional Patent Application Serial No. 60/183,708 filed 02/18/2000 and U.S. Utility Patent Application filed on February 13, 2001 (serial no. unknown), both of which are incorporated herein by reference in their entirety.

FIELD OF THE INVENTION

This invention relates to disposable single serve beverage filter cartridges.

DESCRIPTION OF THE PRIOR ART

A known disposable single serve beverage filter cartridge is disclosed in U.S. Patent Nos. 5,325,765 and 5,840,189 (Sylvan et al.), dated respectively July 5, 1994 and November 24, 1998, the disclosures of which are herein incorporated by reference.

This beverage filter cartridge is comprised basically of an impermeable yieldably-piercable cup-shaped outer container internally subdivided by a permeable cone-shaped filter into first and second chambers. A granular or powdered dry beverage medium, e.g., roasted ground coffee, is stored in the first chamber, and the container is closed by an impermeable yieldably piercable lid.

During a processing cycle, the lid and container bottom are pierced, respectively, by tubular inlet and outlet probes. The inlet probe admits heated liquid under pressure into the first chamber for infusion with the beverage medium, and the resulting brewed beverage passes through the filter into the second chamber from which it exits via the outlet probe for delivery to an underlying cup.

This known beverage filter cartridge has gained rapid and increasingly widespread acceptance, notwithstanding several problems that have persisted since its initial introduction. One such problem stems from a tendency of the container side

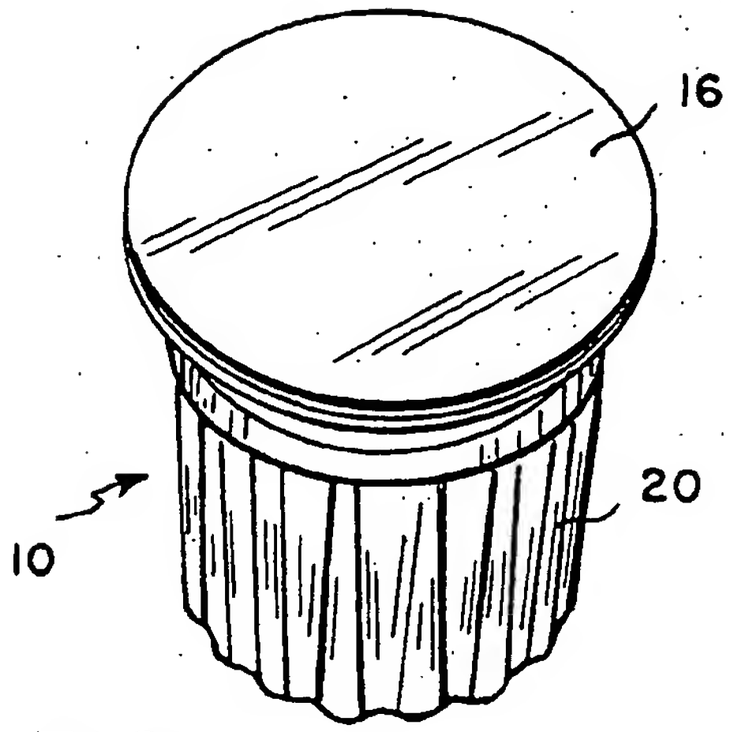

FIG. 1

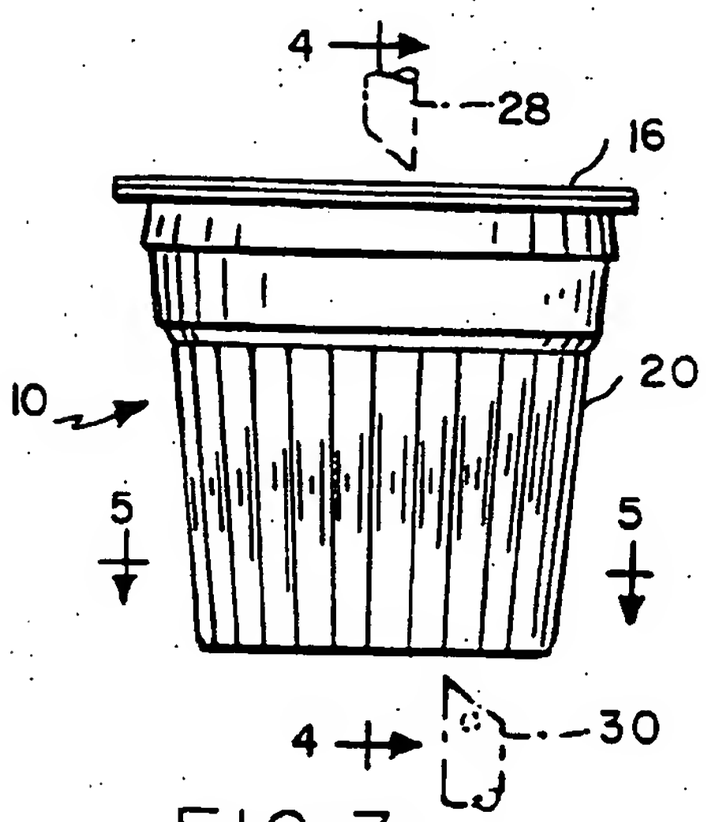

FIG. 3

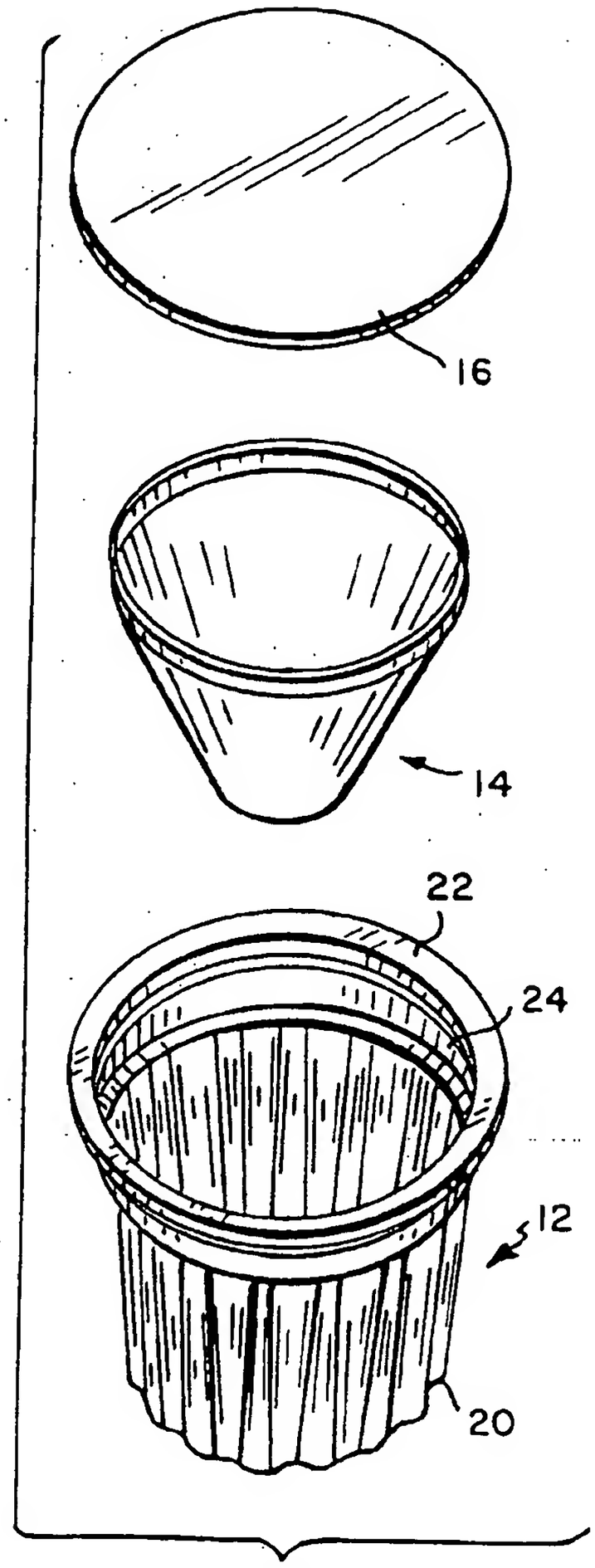

FIG. 2

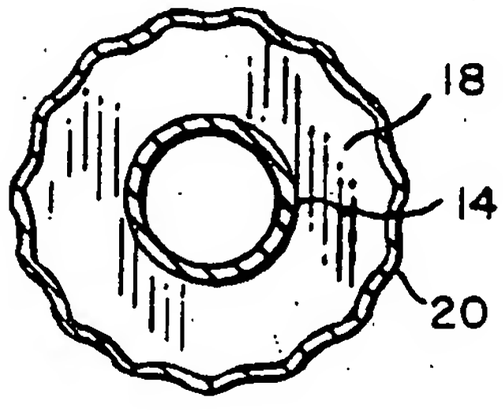

FIG. 5

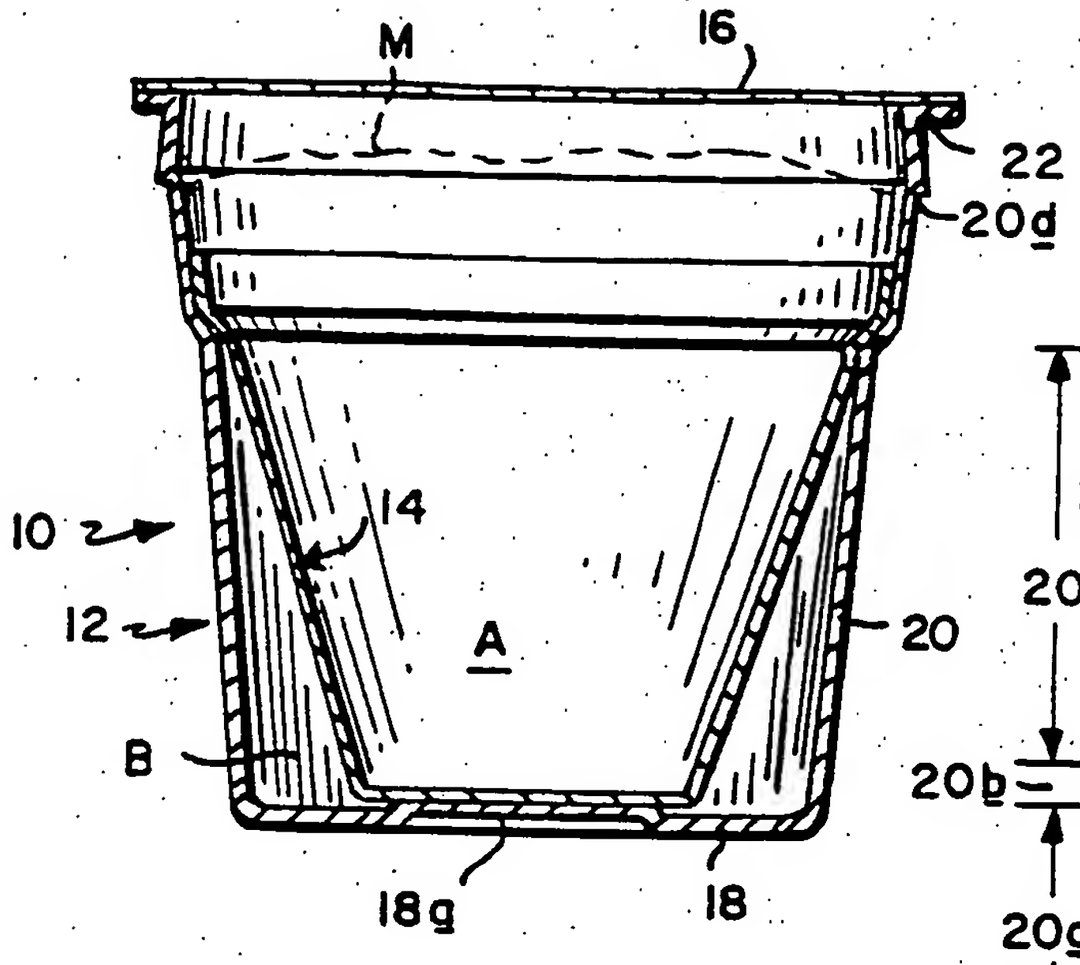

FIG. 4

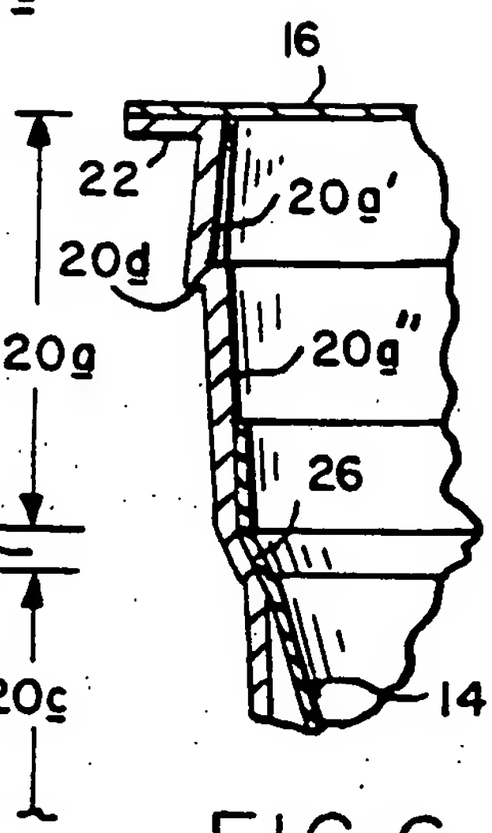

FIG. 6

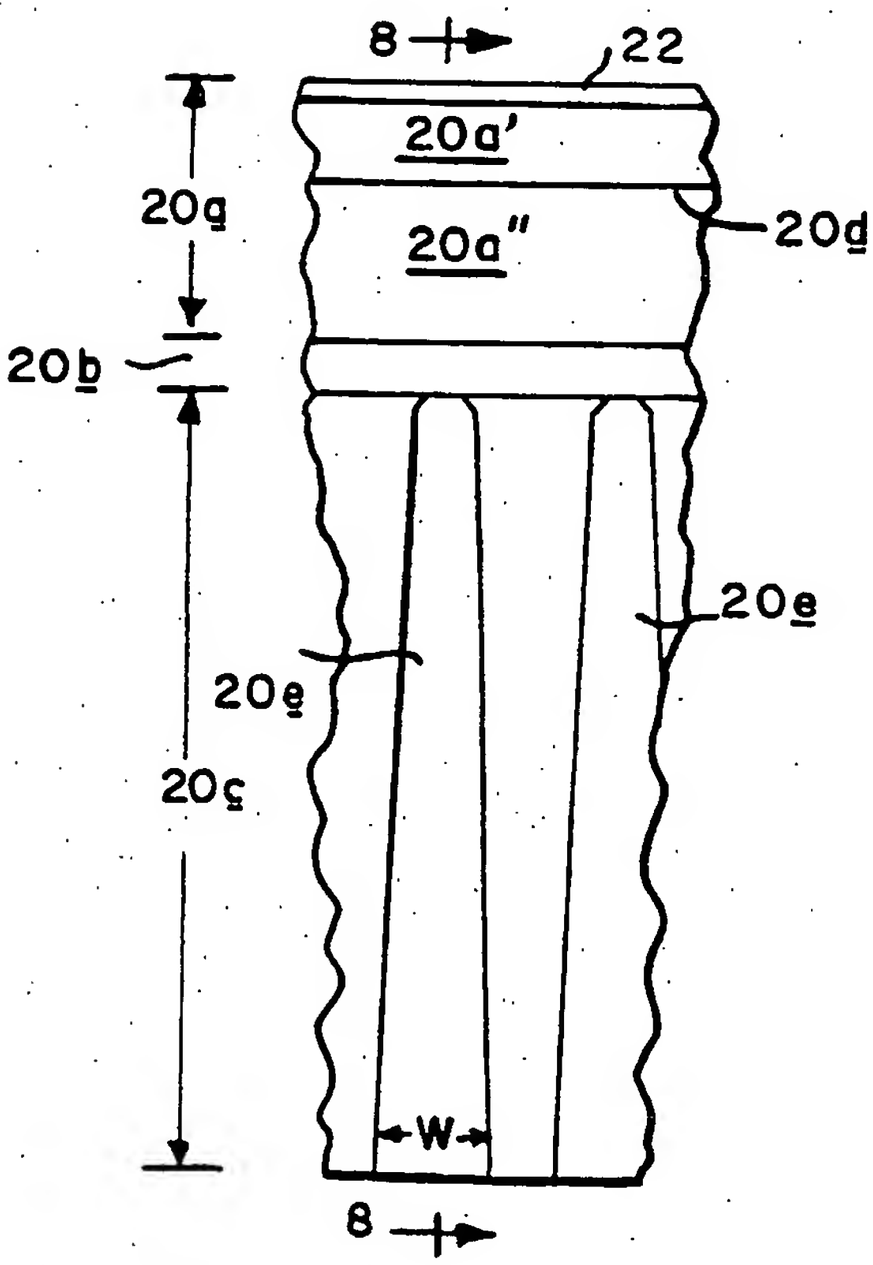

FIG. 7

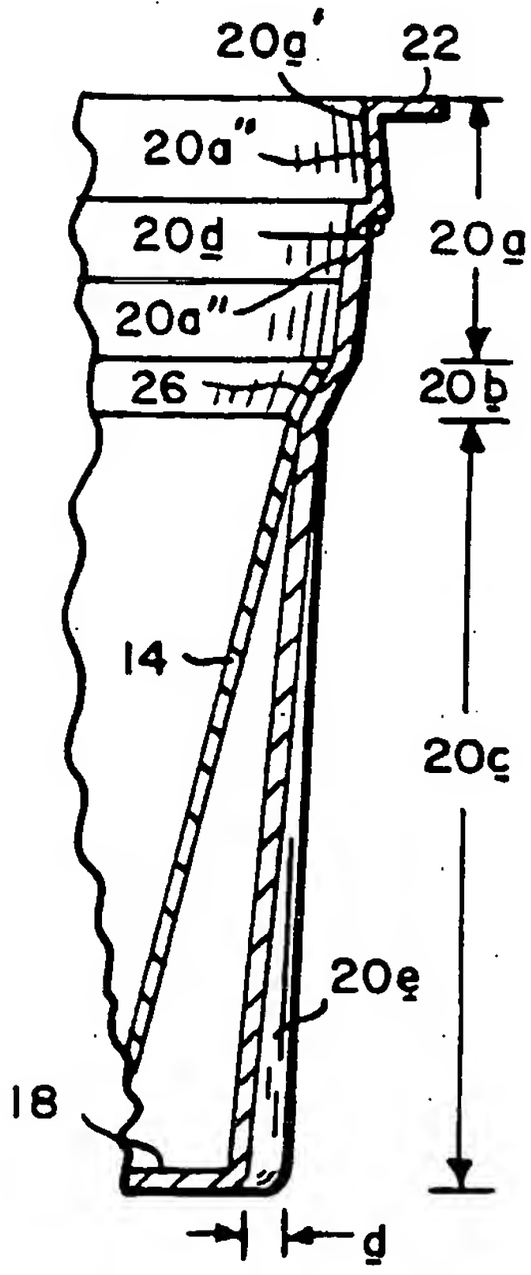

FIG. 8

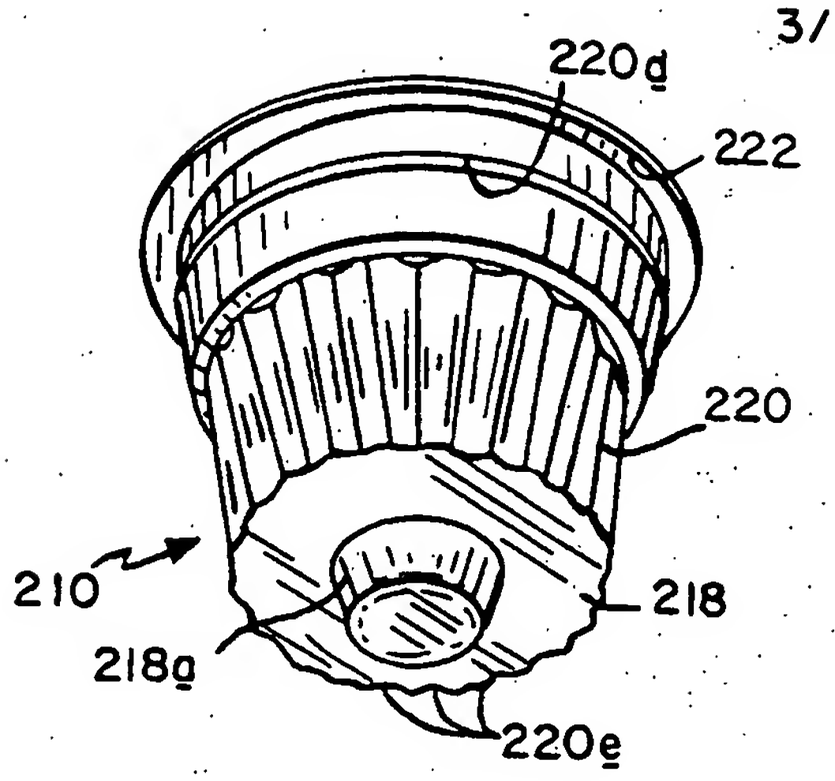

FIG. 9

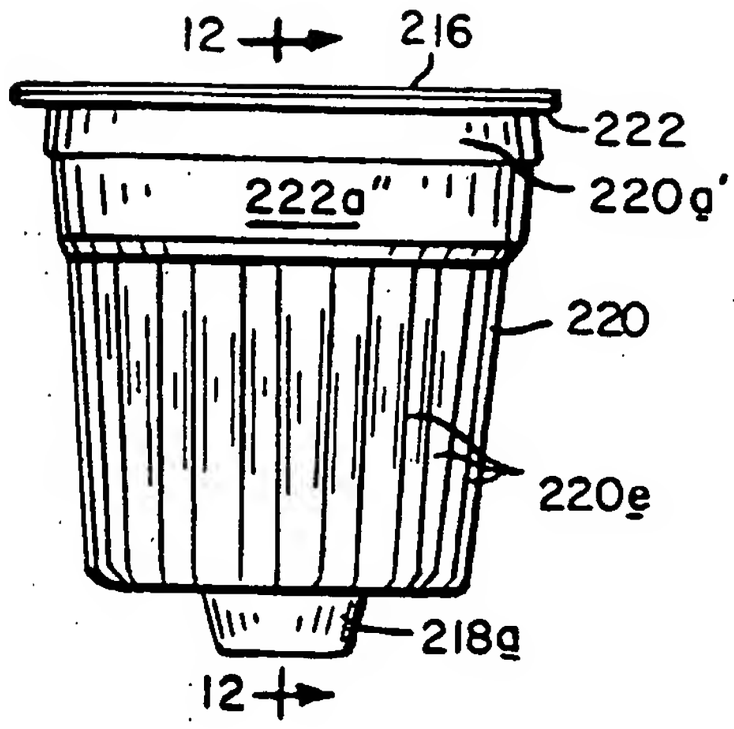

FIG. 10

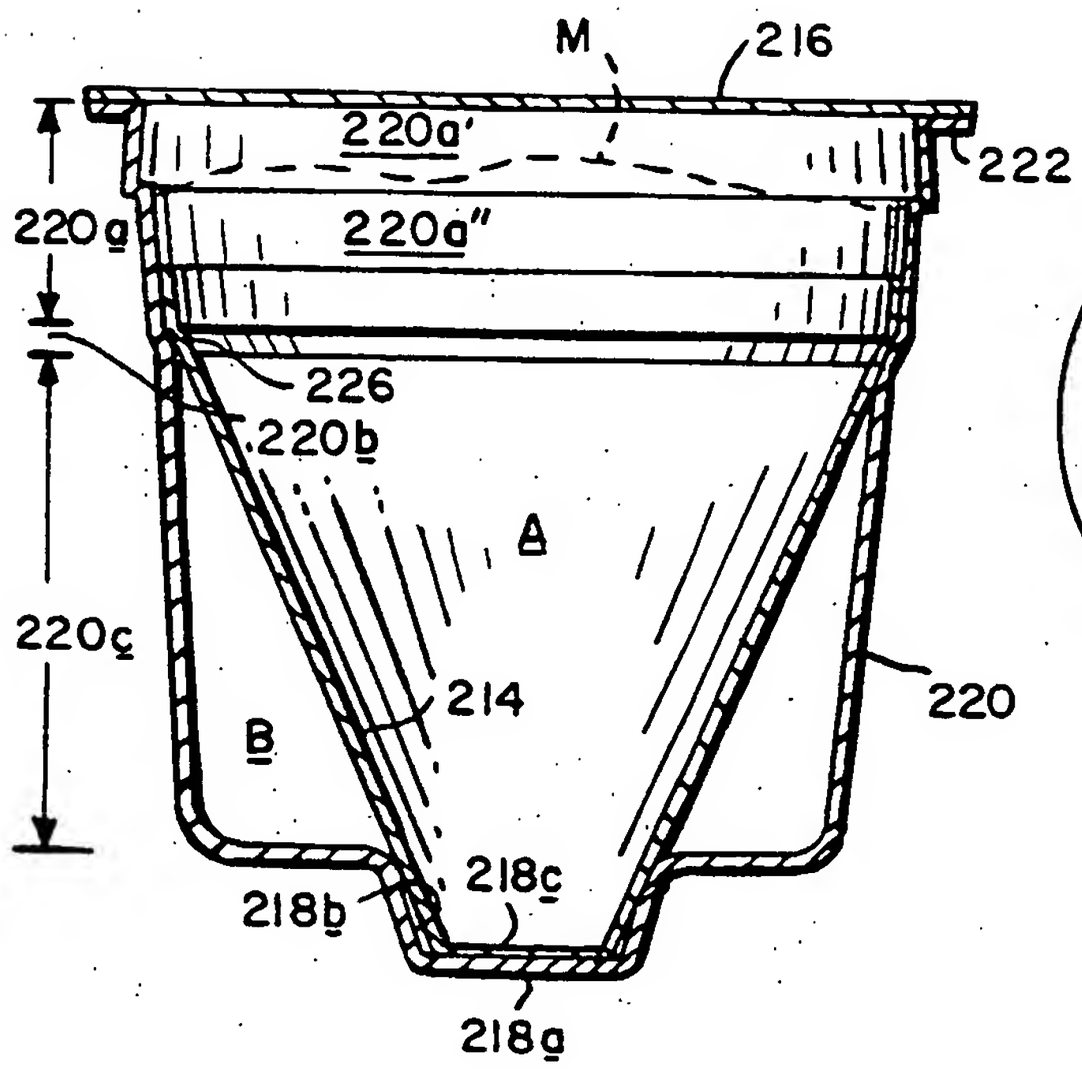

FIG. 12

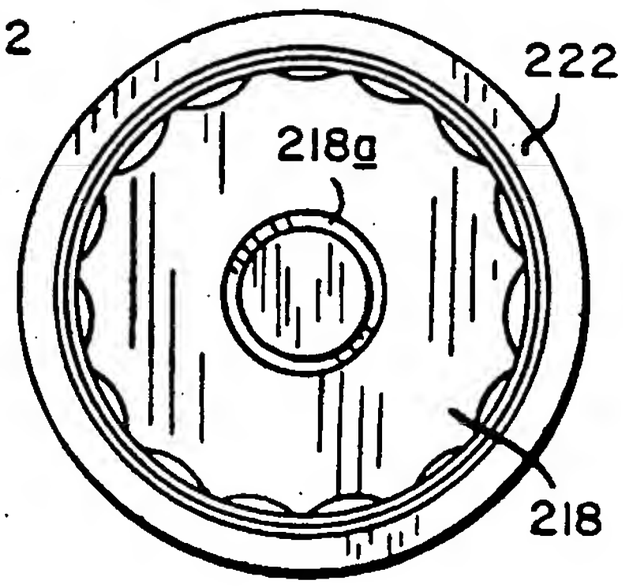

FIG. 11

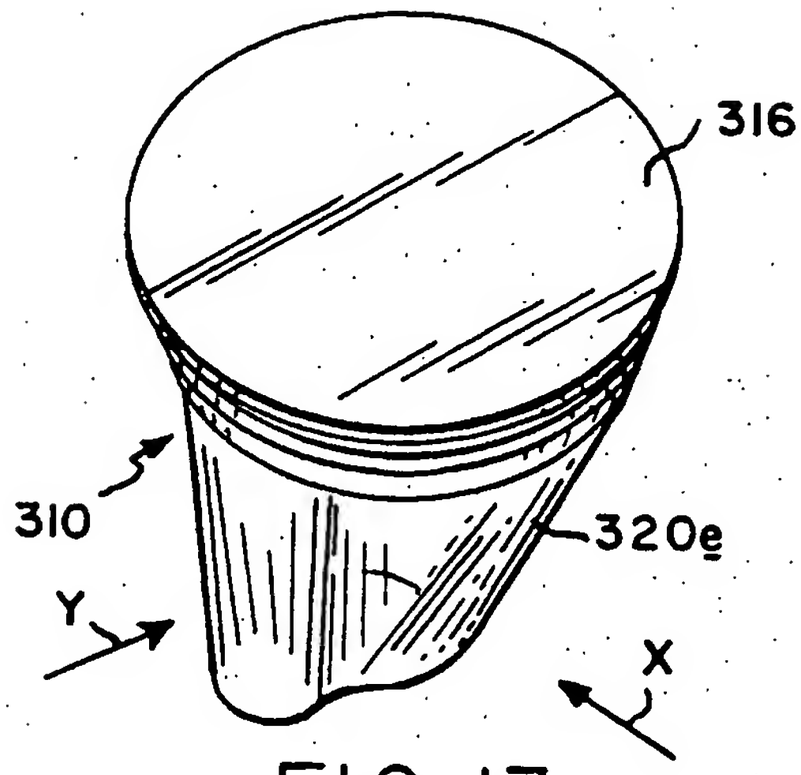

FIG. 13

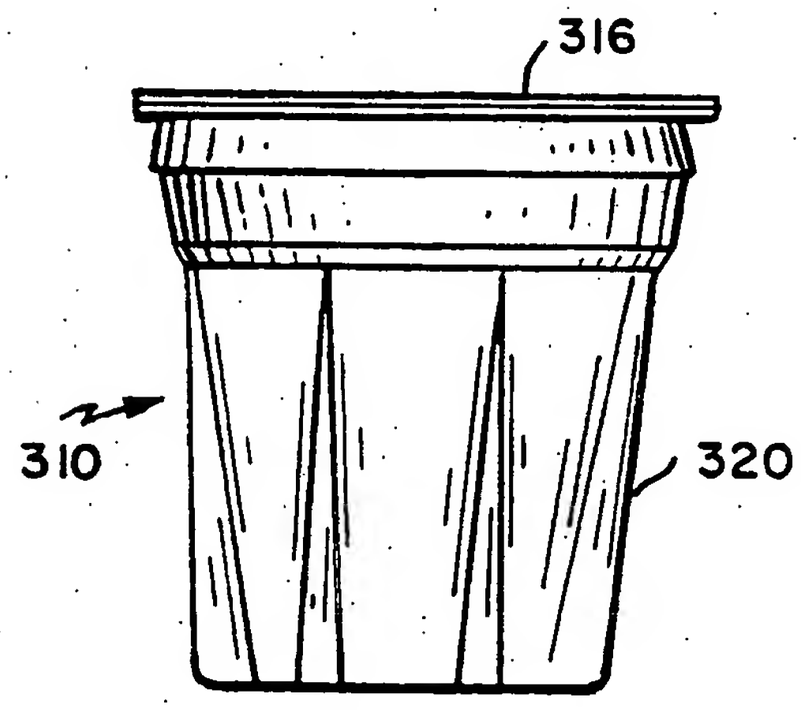

FIG. 15

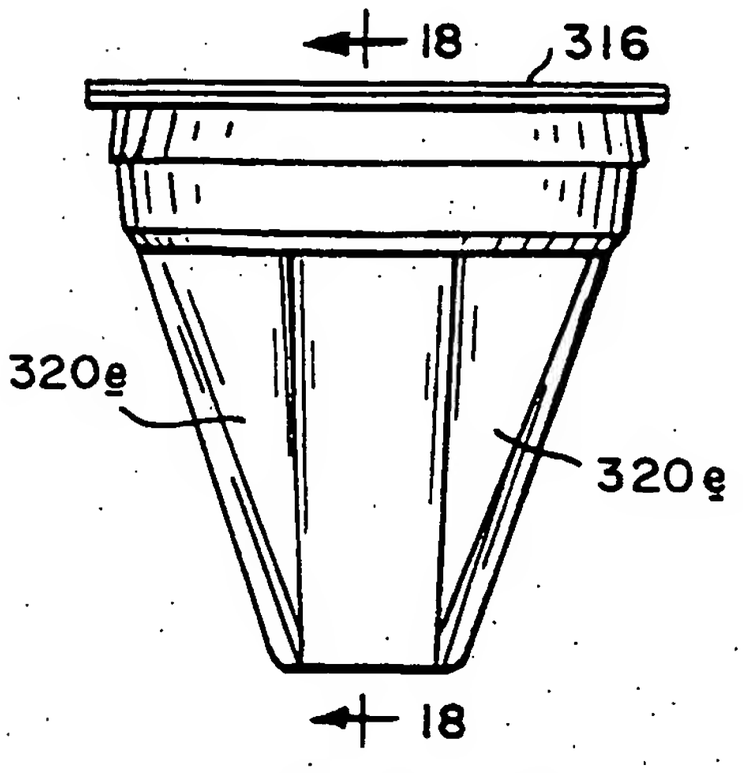

FIG. 16

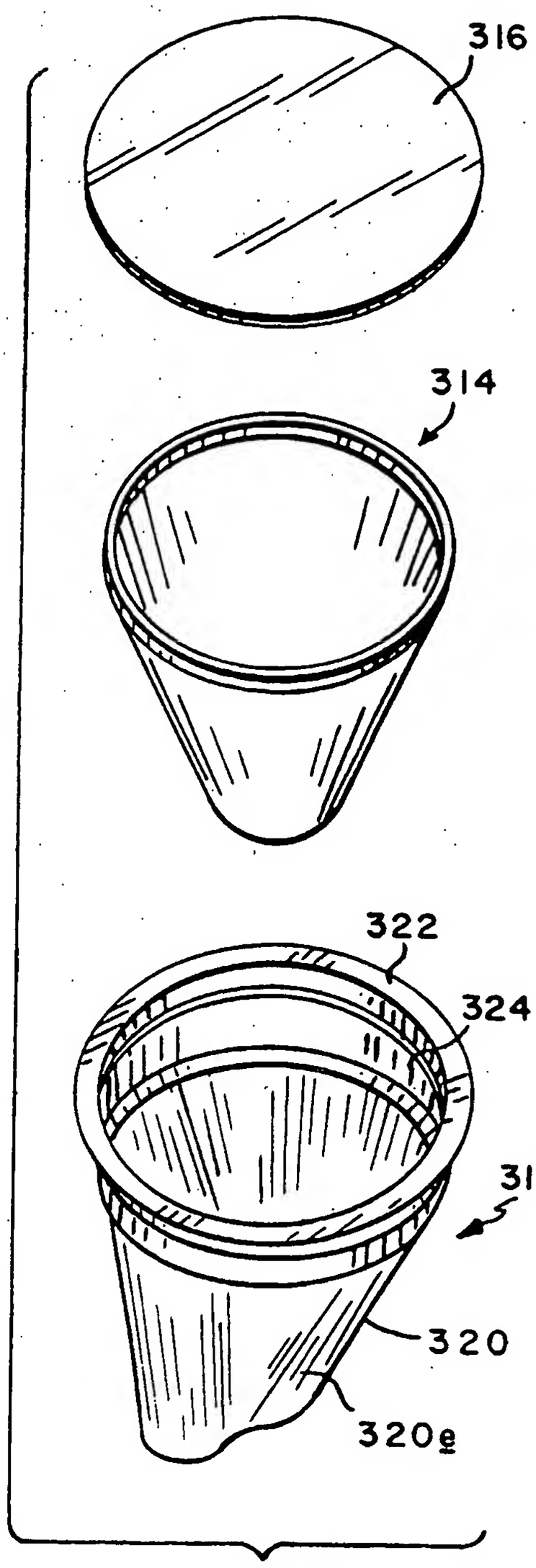

FIG. 14

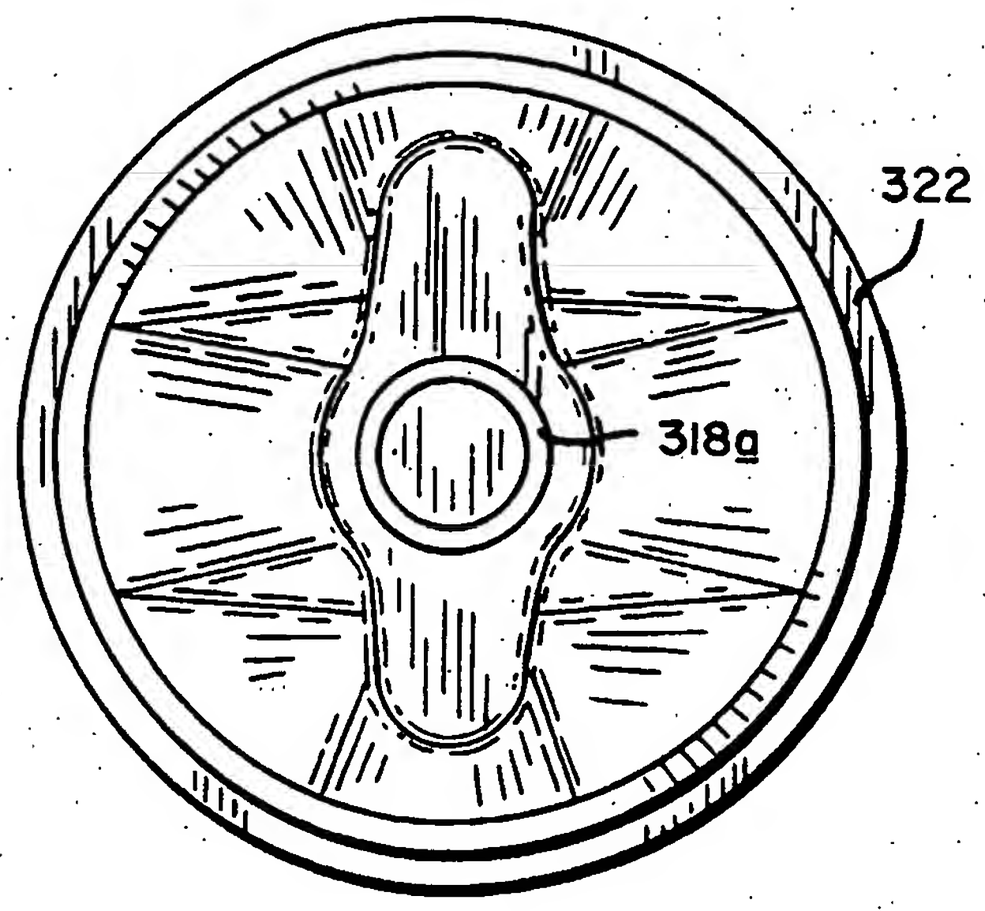

FIG. 17

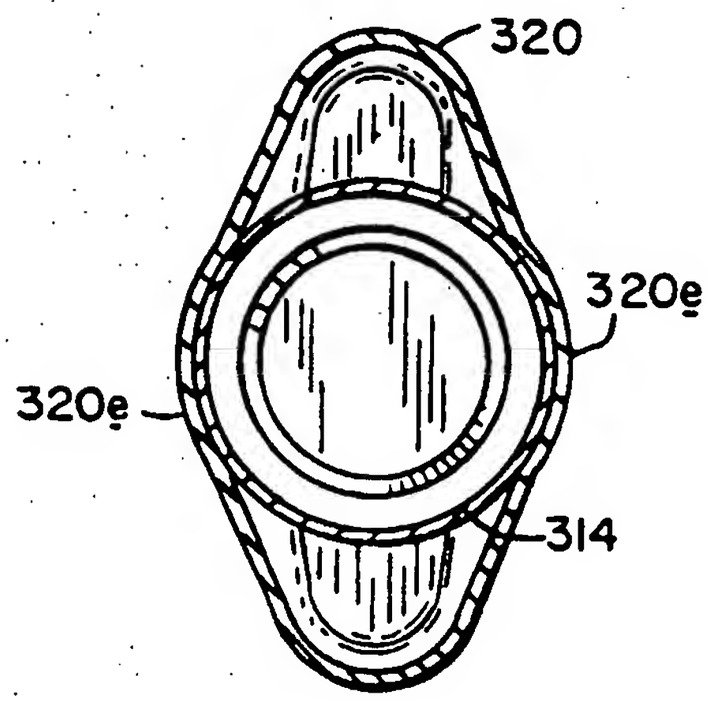

FIG. 20

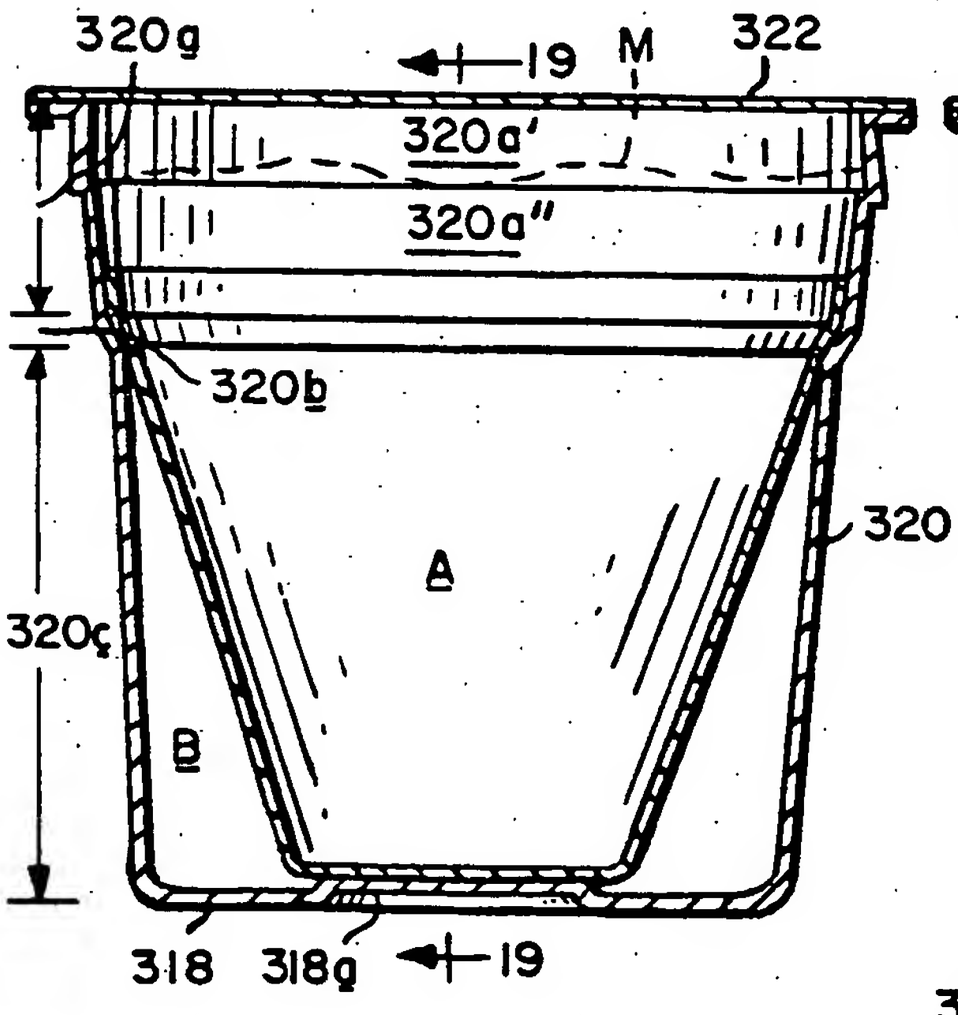

FIG. 18

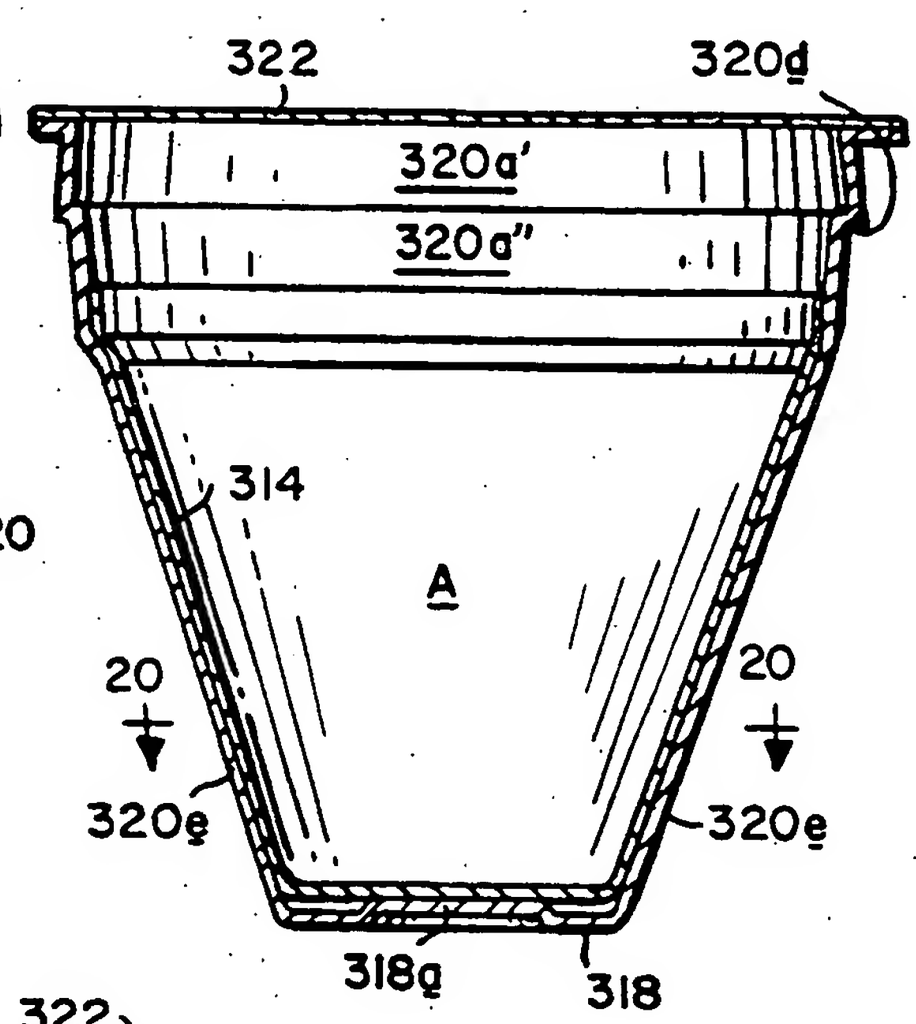

FIG. 19

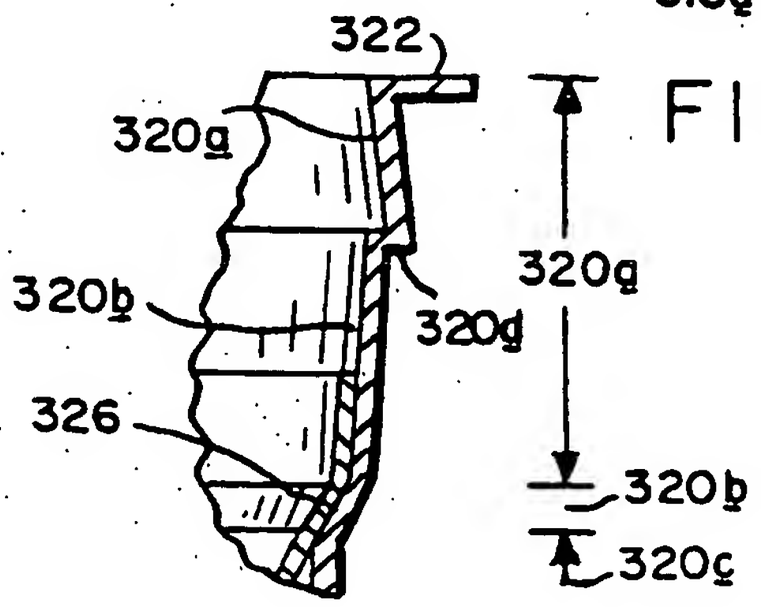

FIG. 21